



**Bulletin 700-HR — Dial Timing Relay**

- Socket- or panel-mounted
- 5 A contact ratings or transistor outputs
- Single- or Multi-Function
- Timing range from 0.05 s...300 hr
- Multi-voltage inputs

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**Product Selection**

**Bulletin 700 Multi-Function Timing Relays with Trigger and Reset Switch Options**

- Socket or Panel Mounted
- Timing Range From 0.05 s...300 hr
- 11-pin base for socket cat. nos. 700-HN101, -HN126, -HN129
- Trigger: Power on or optional trigger signal
- Reset: Power off or optional reset signal

Timing Mode	Supply Voltage	Trigger Options	Reset Options	Outputs	Cat. No.
On-Delay (A) OFF-Delay (D) One Shot (E) Repeat cycle OFF-Start (B) Repeat Cycle ON-Start (B2) Signal ON/OFF-delay (C)	24...48V AC 12...48V DC	1. Power On 2. Start Signal - contact closure (zero volts) - NPN transistor 3. Gate Signal (pause)	1. Power Off 2. Reset Signal - contact closure (zero volts) - NPN transistor	DPDT	<b>700-HR52TU24</b>
				Transistor	* 700-HRT6TTU24
	100...240V AC 100...125V DC	1. Power On 2. Start Signal - contact closure (voltage) - NPN transistor - PNP transistor	Power Off	DPDT	<b>700-HRV52TU24</b>
		1. Power On 2. Start Signal - contact closure (zero volts) 3. Gate Signal (pause)	1. Power Off 2. Reset Signal - contact closure (zero volts)	DPDT	<b>700-HR52TA17</b>
		1. Power On 2. Start Signal - contact closure (voltage)	Power Off	DPDT	* <b>700-HRV52TA17</b>

**Bulletin 700 Multi-Function Timing Relays with Power On Trigger**

- Socket or Panel Mounted
- Timing Range From 0.05 s...300 hr
- 8-pin base for socket cat. nos. 700-HN100, -HN125, -HN108
- Trigger: Power on
- Reset: Power off

Timing Mode	Supply Voltage	Trigger Options	Reset Options	Outputs	Cat. No.
ON-Delay (A) One Shot (E) Repeat Cycle ON-Start (B2) Delayed One Shot (J)	24...48V AC 12...48V DC	Power On	Power Off	DPDT	<b>700-HRS42TU24</b>
				Transistor	* 700-HRT4TTU24
	24...48V AC/DC	Power On	Power Off	SPDT Timed + Instantaneous Contact	* <b>700-HRP42TU24</b>
				SPDT Timed + Instantaneous Contact	<b>700-HRP42TA17</b>
100...240V AC 100...125V DC	Power On	Power Off	DPDT	<b>700-HRS42TA17</b>	

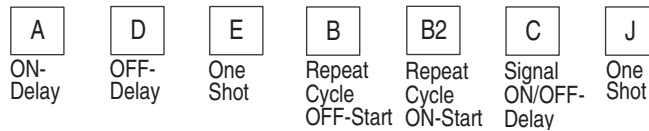
\* Voltage input connection to high signal instead of OV signal.

**Bulletin 700 ON-Delay Timing Relays**

- Socket or Panel Mounted
- Timing Range From 0.05 s...300 h
- 8-pin base for socket cat. nos. 700-HN100, -HN125, -HN108
- Trigger: Power on
- Reset: Power off

Timing Mode	Supply Voltage	Trigger Options	Reset Options	Outputs	Cat. No.
ON-Delay (A)	24...48V AC/DC	Power On	Power Off	SPDT Timed + Instantaneous Contact	<b>700-HRC12TU24</b>
	24...48V AC 12...48V DC			DPDT	<b>700-HRM12TU24</b>
	100...240V AC	Power On	Power Off	DPDT	<b>700-HRM12TA17</b>
				SPDT Timed + Instantaneous Contact	<b>700-HRC12TA17</b>

Timing mode description



**Bulletin 700-HRF Repeat Cycle Timing Relays**

- Socket or Panel Mounted
- Independently adjustable on- and off-time
- 8-Pin base for socket cat. nos. 700-HN100, -HN125, and -HN108
- DPDT contact outputs
- Trigger: Power on
- Reset: Power off



Cat. No. Explanation

700 – HRF    7    2    D    Z12  
*a*    *b*    *c*    *d*    *e*

*a*

Timer Type	
Code	Description
HRF	Repeat cycle with adjustable ON/OFF times

*b*

Function	
Code	Description
7	Repeat cycle with OFF start
8	Repeat cycle with ON start

*c*

Contact Output	
Code	Description
2	DPDT

*d*

Time Range	
Code	Description
D	0.05 s...30 hr








*e*

Supply Voltage	
Code	Description
A18	100...240V AC, 50/60 Hz
U25	24V AC, 50/60 Hz; 24V DC
Z12	12V DC
Z45	48...125V DC




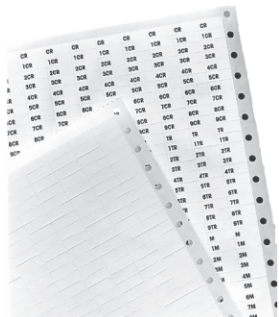




Accessories

	Description	Pkg. Qty.	Cat. No.
 Cat. No. 700-HN100	<b>Screw Terminal Tube Base Socket — Panel or DIN Rail Mounting; Guarded Terminal Construction.</b> 8-Pin for use with Bulletin 700-HR and -HX timing relays.	10	700-HN100
 Cat. No. 700-HN125	<b>Screw Terminal Tube Base Socket — Panel or DIN Rail Mounting; Open Style Construction.</b> 8-Pin for use with Bulletin 700-HR and -HX timing relays. No retainer clip required.	10	700-HN125
 Cat. No. 700-HN101	<b>Screw Terminal Tube Base Sockets — Panel or DIN Rail Mounting; Guarded Terminal Construction.</b> 11-pin for use with 3PDT 700-HA relays.	10	700-HN101
 Cat. No. 700-HN126	<b>Screw Terminal Tube Base Sockets — Panel or DIN Rail Mounting; Open Style Terminal Construction.</b> 11-pin for use with 3PDT 700-HA relays. No retainer clip required.	10	700-HN126
 Cat. No. 199-DR1	<b>DIN (#3) symmetrical hat rail</b> 35 x 7.5 x 1 m	10	199-DR1
 Cat. No. 700-HN108	<b>Specialty Socket</b> 8-pin backwired socket with solder terminals for use with 700-HR timing relays. Order 10 or multiples of 10.	10	700-HN108
 Cat. No. 700-HN129	<b>Specialty Socket</b> 11-pin back-wired socket with solder terminals for use with Bulletin 700-HR timing relays.	10	700-HN129

Bulletin 700-HR  
**Plug-in Timing Relays**  
 Accessories

	Description	Pkg. Quantity	Cat. No.
 Cat. No. 700-HN130	<b>Frame Adapter</b> For flush or door mounting of all Bulletin 700-HR and -HX timers.	1	700-HN130
 Sample Retainer Clips	<b>Retainer Clip for Cat. Nos. 700-HN100 and -HN101 Sockets with all 700-HR Timing Relays</b> Secures timer in socket.  Note: Not required for installation	10	700-HN131
 Cat. No. 700-HN132	<b>Protective Cover</b> Helps prevent tampering of timing and mode settings. Provides a degree of protection against water and dirt from entering the front of the relay. For use with all Bulletin 700-HRs and -HX timing relays.	1	700-HN132
	<b>Pre-Printed Identification Tags</b> — contains 10 sheets of pre-printed and blank tags. Each sheet contains 13 sets of the markings CR...9CR, TR...9TR, M...9M, F, R, 1S, and 117 blank tags. Tags are peel-off with sticky backing for easy placement on relays.	10	700-N40
	<b>Blank Identification Tags</b> — contains 10 sheets of blank identification tags for customer specialized printing. Each sheet contains 546 blank tags. Tags are peel-off with sticky backing for easy placement on relays.	10	700-N41

**Bulletin 700-HR Multi-function, Multi-Range Dial Timing Relay, Socket, Retainer Clip Reference Chart**

Timer Type	Socket Cat. No.	Retainer Clip Cat. No.
700-HR52, -HRT6, -HRV, -HRQR	⊛ 700-HN101	700-HN131
	⊛ 700-HN126	Not Required*
	⊛ 700-HN129	Not Applicable
700-HRS, -HRT4, -HRP, -HRC, -HRM, -HRF, -HRY, -HRQN	‡ 700-HN100	700-HN131(See note above)
	‡ 700-HN108	Not Applicable
	‡ 700-HN125	Not Required*

\* Design of these sockets holds the timing relays securely and does not require retainer clips.

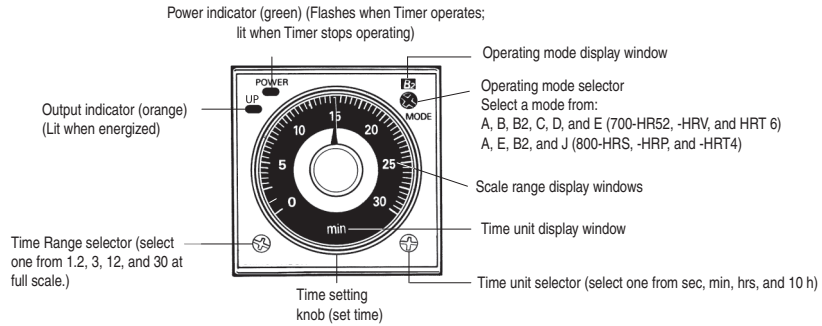
⊛ 11 pins.

‡ 8 + pins.

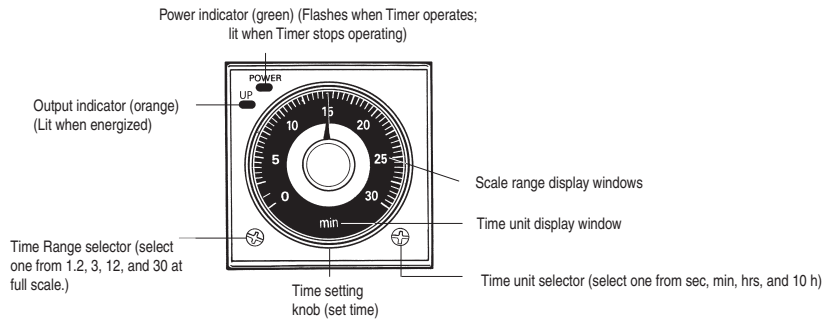
	700-HR, -HRS, -HRV	700-HRP	700-HRC	700-HRM	700-HRF	700-HRY	700-HRQ	700-HRT (Transistor Outputs)	
<b>Electrical Ratings</b>									
Pilot Duty Rating	NEMA B300							—	
Thermal Current ( $I_{th}$ )	5 A							100 mA @ 30V DC max.	
Make	▶] [◀	120V AC	30 A			—			
	▶] [◀	240V AC	15 A			—			
Break	◀] [▶	120V AC	3 A			—			
	◀] [▶	240V AC	1.5 A			—			
Hp at 120V	1/6 Hp (0.12 kW)	1/4 Hp (0.18 kW)		1/6 Hp (0.12 kW)		1/4 Hp (0.18 kW)	1/6 Hp (0.12 kW)	—	
Hp at 240V	1/3 Hp (0.25 kW)								
Resistive Load	5 A at 250V AC/30V DC								
Inductive Load	AC-15 @ 250V AC, 3 A/DC-13 @ 30V DC, 0.5 A								
Accuracy of Operating Time	±0.2 % FS max. (±0.2 % ±10 ms max. in a range of 1.2 s)								
Setting Error	±5 % FS ±50 ms (The value is ±5 % FS +100 ms to -0 ms max. when the C or D mode signal of the 700-HRVs are OFF.)								
Influence of Voltage	±0.2 % FS max. (±0.2 % ±10 ms max. in a range of 1.2 s)								
Influence of Temperature	±1 % FS max. (±1 % ±10 ms max. in a range of 1.2 s)								
Permissible Leakage Current	—								
Power Consumption	<b>-HR52, -HRS</b>	<b>-HRV</b>	<b>-HRP, -HRC</b>	<b>-HRM</b>	<b>-HRF</b>	<b>-HRY</b>	<b>-HRQ</b>	<b>-HRT</b>	
240V AC, Output ON	2.1 VA	2.5 VA	2.0 VA	2.1 VA	10 VA	12 VA	0.4 VA	—	
240V AC, Output OFF	1.3 VA	1.8 VA	2.0 VA	1.3 VA	10 VA	12 VA	0.4 VA	—	
24V DC, Output ON	0.8 W	0.9 W	0.9 W	0.8 W	1.0 W	—	0.2 W	0.3 W	
24V DC, Output OFF	0.2 W	0.3 W	0.9 W	0.2 W	1.0 W	—	0.2 W	0.2 W	
<b>Design Specifications</b>									
Dielectric Strength	2000V AC (1000V AC for 700-HRT), 50/60 Hz for 1 min (contact to frame) 2000V AC (1000V AC for 700-HRT), 50/60 Hz for 1 min (between control output terminals and operating circuit) 2000V AC, 50/60 Hz for 1 min (pole-to-pole) 1000V AC, 50/60 Hz for 1 min (between contacts not located next to each other) 2000V AC, 50/60 Hz for 1 min (contact to coil)								
<b>Mechanical</b>									
Vibration Resistance	Malfunction: 10...55 Hz with 0.5 mm double amplitude each in three directions for ten minutes each								
Shock Resistance	Malfunction: 100 m/s <sup>2</sup> (10 G)				98 m/s <sup>2</sup> (10 G)	294 m/s <sup>2</sup> (10 G)	98 m/s <sup>2</sup> (10 G)	100 m/s <sup>2</sup> (10 G)	
<b>Environmental</b>									
Noise Immunity	±1.5 kV for ±600V DC				±400V for 12V DC		±1kV for 48V DC	±1.5 kV for ±600V DC	
Static Immunity	Malfunction: 8 kV								
Ambient Temperature	Operating: -10...55 °C (with no icing) Storage: -25...65 °C (with no icing)								
Ambient Humidity	Operating: 35...85 %								
<b>Construction</b>									
Life Expectancy (Min. Operations)	Mechanical: 20 000 000. (under no load at 1800 operations/h) Electrical: 100 000 (5 A at 250V AC, resistive load at 1800 operations/h)					Mech: 10 <sup>7</sup> Electrical: 10 <sup>4</sup>			
EMC	(EMI) EN50081-2 Emission Enclosure: EN55011 Group 1 class A Emission AC Mains: EN55011 Group 1 class A (EMS) EN50082-2 Immunity ESD: EN61000-4-2: 4 kV contact discharge (level 2) 8 kV air discharge (level 3) Immunity RF-interference from AM Radio Waves: ENV50140: 10 V/m (80 MHz...1 GHz) (level 3) Immunity RF-interference from Pulse-modulated Radio Waves: ENV50204: 10 V/m (900 ±5 MHz) (level 3) Immunity Conducted Disturbance: ENV50141: 10 V (0.15...80 MHz) (level 3) Immunity Burst: EN61000-4-4: 2 kV power-line (level 3) Immunity Surge: EN61000-4-52 kV I/O signal-line (level 4) 1 kV line to line 2 kV line to ground (level 3)								
Degree of Protection	IP40 (panel surface)								
Weight	Approx. 90 g								
Certifications	CSA Certified (File No. 70751), UL Recognized (File No. E14843 Guide No. NRNT2), CE Marked, C-Tick Marked								
Standards	UL 508, CSA C22.2 No. 14, EN 61812-1, EN 61000-6-2, -6-4								

Timer Functions

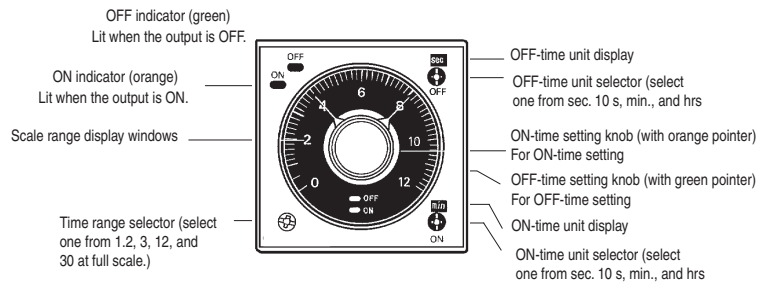
700-HR Multifunction Timer



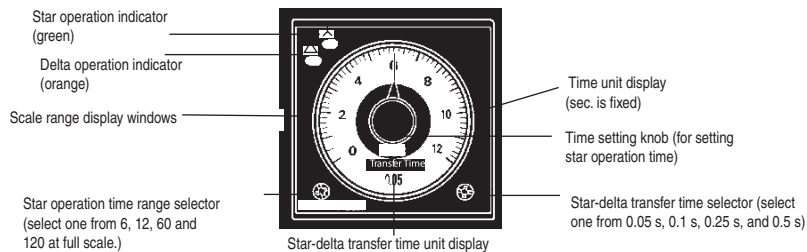
700-HRC -HRM On-Delay Timer



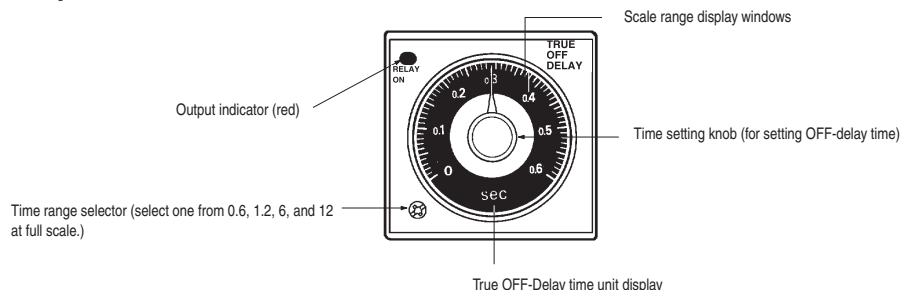
700-HRF Twin Timer



700-HRY Star-Delta Timer



700-HRQ True Off-Delay Timer

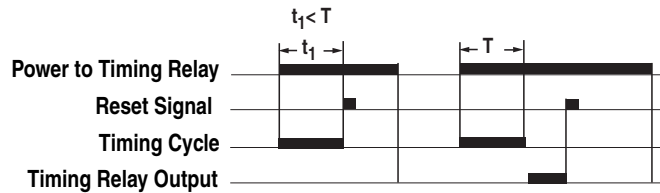


**Specifications for Start, Gate, Reset Signal (Cat. Nos. 700-HR52, -HRT6, -HRV, -HRQR)**

Start, Reset, and Gate signals are typically contact closures or signals from a solid-state sensor.

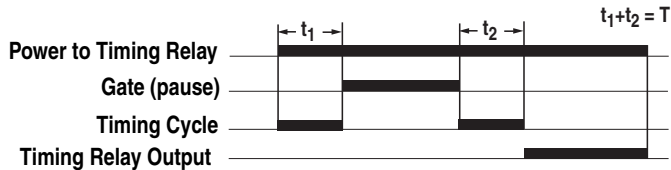
**(R) Reset Signal**

The reset signal is not required for normal operation. Reset can be accomplished by removing power from the timing relay. To reset the timer without removing power, a signal must be applied which resets the timing cycle and returns the output contacts to their shelf state. The reset signal will override both the start signal and gate signal. The reset signal can be either momentary or maintained.



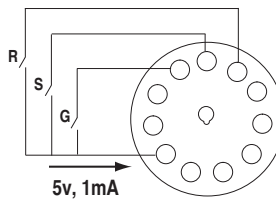
**(G) Gate Signal**

The gate signal is not required for normal operation. The gate signal provides a pause or retentive timing function. When the gate signal is applied the timing cycle is momentarily interrupted. When the signal is removed, the timing cycle resumes timing at the point the cycle was interrupted and will continue timing until the time delay is completed or the gate signal is re-applied.



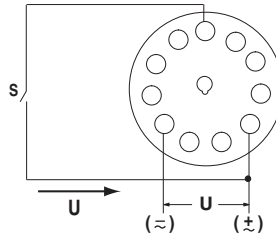
**Contact Signal — Cat. Nos. 700-HR52, -HRT6, -HRQR**

Contact closure provides signal to timer. A low energy signal is generated by the 700-HR timing relay. For optimum reliability, use contacts designed for low energy switching (5V, 1 mA) (Bul. 800F-X\_V, 800T-X\_V). No external voltage should be connected to the contact signal.



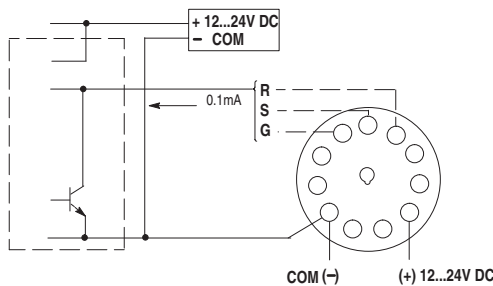
**Contact Signal — Cat. No. 700-HRV**

For use in applications where it is not possible to use contacts designed for low energy switching. Contact closure provides signal to timer. A signal is generated by the 700-HR timing relay, and is the same potential as the supply voltage of the timing relay. No external voltage should be connected to contact signal. 700-HRV52TU24 supply voltage: 24...48V AC, 12...48V DC / 700-HRV52TA17 supply voltage: 100...240V AC, 100...125V DC.



**Solid-State Signal — Cat. Nos. 700-HR52, -HRT6**

Timing relay is suitable for use with a 3-wire NPN 12...24V DC sensor. Supply voltage potential of sensor must be the same as the supply voltage potential of the timing relay. Permissible off-state leakage current from sensor: 0.01 mA max.



**Solid-State Signal — Cat. No. 700-HRV**

Timing relay is suitable for use with a 3-wire NPN or PNP 12...24V DC sensor. Supply voltage potential of sensor must be the same as the supply voltage potential of the timing relay. Permissible off-state leakage current from sensor: 0.01 mA max.

